

Gender-specific assessment of natural resources using the pebble game

Elok Mulyoutami, Noviana Khususiyah, Endri Martini, S Suyanto

Using a gender perspective to assess the preferences and values people associate with natural resources is essential, especially if the research aims to deepen understanding about men and women in relation to their natural environment. A game using pebbles has proven effective in classifying the value of natural resources, and the reasons behind the valuation. The pebble game is among many tools used in participatory rural appraisals (PRA). Sheil et al. (2002), for example, used the method to examine biological diversity in the context of landscape assessment. The pebble game was adapted in several gender researches in rural and migrant communities in Jambi, South and Southeast Sulawesi, Indonesia. These were supported by AgFor (Sulawesi Project funded by the Canadian International Development Agency) and REALU (Reducing Emission from Alternative Land Uses) projects. The studies assessed the importance of livelihood sources, the levels and nature of involvement of men and women in farming activities, the reasons for men and women preferences over natural resources, and the values they attach to them.

The weights and scores assigned to the preferences should not be seen as absolute or precise, but as indicative of their relative importance. The game can be played either within a group or individually using a structured interview. For the studies, the focus was on group discussion rather than individual interviews.



Materials

- Meta cards
- Tape
- Flip chart
- Marker pens
- Pebble or button
- Data sheet



Steps

Preparation

1. Make an effort to understand the issues and characteristics of the specific environment, especially the natural resources that affect the livelihoods of the community.
2. On meta cards, write the livelihood sources and their functions that were identified in step 1 (see example in Table 1) and if necessary, draw a figure or symbol to represent each category to help illiterate participants.

Table 1: Example of livelihood sources and land use function

Livelihood sources	Land use function
Paddy field	For income
Mixed garden	For income and preventing soil erosion
Farm labour	-
Estate labour	-
Other off-farm activity	For income
Wood lot	Building material
Community forest	Ritual and culture

3. Prepare a data sheet to record all the information gathered from the discussion. The data sheet should include both the discussion results and a checklist of observations, as well as any other background information that might influence the discussion.
4. Decide the number of pebbles. The more pebbles used, the greater the data variability. A good number of pebbles is 100.
5. Select participants. Consider gender balance, age, occupation or livelihood source, ensure that knowledgeable people (local leaders, elders) are included and limit the number of participants, ideally 4-12 people per group.
6. Set the time and location of the game. Choose a strategic location—it must be

accessible to both genders. Also, ensure sufficient space for separate discussions for men and women. Moreover, discussions can be simultaneous or parallel, depending on available resources.

7. Train at least one facilitator to lead each discussion group, and one recorder to document the process.

8. If necessary, hire a local language interpreter. Language is very important for building rapport with the participants.

The process

1. Introduce the facilitator and/or research team to the participants and explain the objectives of the game.

2. Ask the participants to introduce themselves. This is important in building rapport.

3. List and explain all the categories identified and ask the participants to confirm whether the list is accurate.

4. Ensure that all participants have the same understanding of livelihood issues and functions as well as all the questions that will be ranked or scored.

5. Ask participants to distribute pebbles for each item in Table 1 based on their degree of importance and or degree of male and female involvement. Ensure that all items are ranked or scored.

6. Observe the discussion process and note down pertinent points/issues.

7. Fill in the data sheet and make sure that all the results are documented.

8. Repeat the same process to 2-3 more groups for replication purposes.

Documentation

1. Data sheet should include:

- Each participant's gender, age, occupation or main livelihood source, house location, and other information considered important for analysis.
- Notes on the composition of participants: Do they reflect the research requirement for gender, age, education level? Has the process of the interview been properly recorded? Have notes been taken on comments, responses and gestures that influence the process of discussion and scoring?
- Discuss results: Tables of ranked and scored data, qualitative information related to the data, interesting statements or comments.

2. Capture the discussion by video or tape recorder, or both and take photos.

Example of results from the pebble game in Sulawesi

a. Gender involvement

The pebble game is useful in identifying how women and men use land-based livelihood sources. In the example shown in Table 2, for example, the results show that both genders were involved in mixed garden cultivation as against other livelihood sources, with women indicating a higher proportion of involvement.

Table 2: Sample results of the pebble game

Land-based livelihood source	Female involvement	Male involvement
Paddy field	13	17
Upland field	10	15
Mixed gardens	35	27
Timber forest products	3	2
Non-timber forest products	5	6
Tenant	24	17
Estate labour	-	-
Daily farm labour	10	16
Total	100	100

b. Roles and activities in land-based livelihood according to gender

In Figure 1, both genders demonstrated similar perceptions of how men and women are involved in managing a cacao farm. Both agreed that women's involvement was primarily focused on harvesting, post-harvest and marketing. The difference in perception was on how they saw gender involvement in the nursery. Men saw the role of women as higher than that of men, while women had the opposite perception.

c. Perceptions of natural resource functions and values according to gender

As shown in Figure 2, the perceptions of men and women on forest functions and values are different, although both assigned heavy weight to the environment function as opposed to the livelihood function. Women assessed soil erosion prevention as the highest function of forests whereas men felt its most important function is that of being a 'water reservoir'.

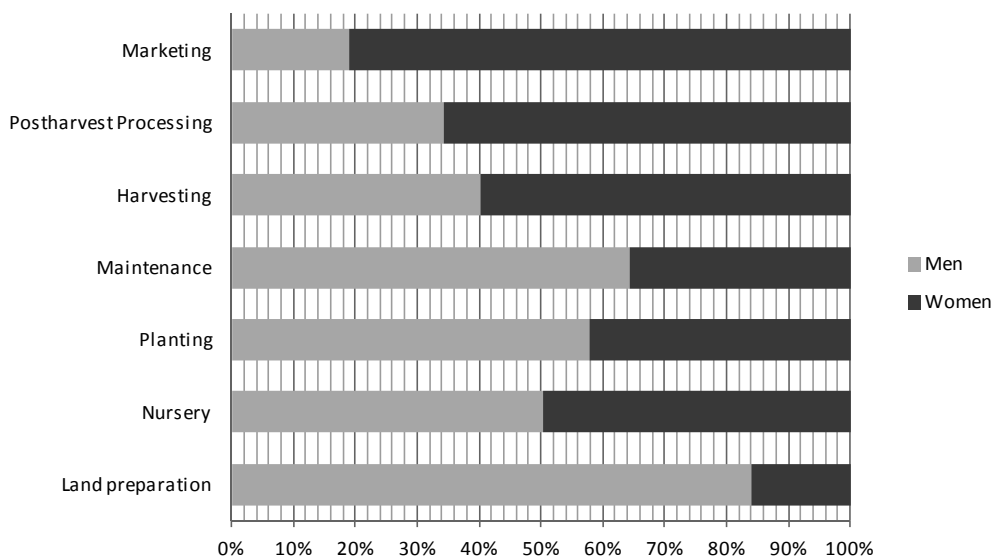


Figure 1: Men and women's role in every stage of cocoa management. Women have more roles than men in harvesting, postharvesting and marketing.

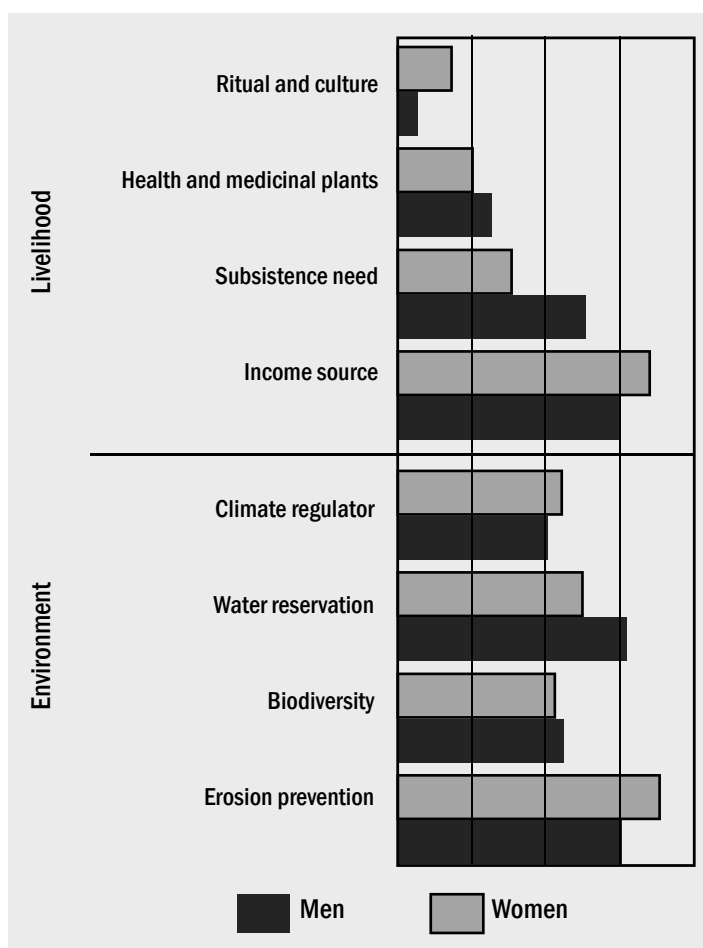


Figure 2: Forest functions and values by gender

Advantages

The pebble game is a flexible tool that can elicit important information on socio-cultural issues.

Limitations

The game cannot capture the power relations between men and women within communities. The game is a participatory tool that depends on the quality of discussion. Bias can happen unexpectedly.

Do's and don'ts

- Do encourage active participation.
- Do ensure that all participants agree with the discussion results.
- To capture forces affecting the results of the game or influencing the discussion, always take note of who is dominating the discussion—this can be used to further the analysis.
- Do probe to get in-depth information on interesting issues.
- Don't direct or influence alternative answers.
- Don't dominate the discussion. Give the participants sufficient time to express their opinions.
- Don't force the participants to finish discussion in a given time. Be flexible.

Reference

Sheil D, Puri RK, Basuki I, van Heist M, Wan M, Liswanti N, Rukmiyati, Sardjono MA, Samsoedin I, Sidiyasa K, Chrisandini, Permana E, Angi EM, Gatzweiler F, Johnson B, Wijaya A. 2002. Exploring biological diversity, environment and local people's perspectives in forest landscapes: methods for a multidisciplinary landscape assessment. Bogor, Indonesia: Center for International Forestry Research.

Recommended reading

Mulyoutami E, Martini E, Khususiyah N, Isnurdiansyah, Suyanto. 2012. Agroforestry and forestry in Sulawesi series: gender, livelihoods and land in South and Southeast Sulawesi. ICRAF Working Paper no. 158.